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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,793	07/31/2003	Chun-Seung Yang	45358	7877

7590 06/15/2006

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EXAMINER	
MORRISON, THOMAS A	

ART UNIT	PAPER NUMBER
3653	

DATE MAILED: 06/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/630,793	YANG, CHUN-SEUNG	
	Examiner	Art Unit	
	Thomas A. Morrison	3653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/30/2006 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: (1) the structure of the recited "a pivot unit" in claims 1 and 8 that allows the pivot unit to set the inclination angle of the idler roller within a predetermined range **according to a type of paper**, or the structural relationship between the recited "a pivot unit" and the idler roller that allows the pivot unit to set the inclination angle of the idler roller within a predetermined range **according to a type of paper**; (2) the structure of the recited "a pivot unit" in claim 15 that allows the pivot unit to set the inclination angle of the idler

roller within a predetermined range **according to a physical characteristic of the paper**, or the structural relationship between the recited "a pivot unit" and the idler roller that allows the pivot unit to set the inclination angle of the idler roller within a predetermined range **according to a physical characteristic of the paper**; and (3) the structure of the recited "a pivot unit" in claim 16 that allows the pivot unit to set the inclination angle of the idler roller within a predetermined range **according to a weight of the paper**, or the structural relationship between the recited "a pivot unit" and the idler roller that allows the pivot unit to set the inclination angle of the idler roller within a predetermined range **according to the weight of the paper**. There is insufficient structure or structural relationship recited in claims 1, 8, 15 and 16 to understand how the pivot unit performs the recited functions in these claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 2,687,886 (Pitner).

Regarding claim 8, Figs. 3-4 show a paper registration apparatus for a printer which performs side registration of a sheet of paper, the apparatus comprising:

an idle roller (40) installed above a transfer roller (18) at a predetermined inclination angle with respect to the transfer roller (18) to move a sheet of paper towards a sidewall (16) of the paper registration apparatus; and

a pivot unit (including 36, 37, 44 and 45) that sets the inclination angle of the idle roller (40) within a predetermined range according to a type of the paper. See, e.g., column 4, lines 3-5 for an explanation of the setting of the pivot unit.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-4, 8-11 and 15-16, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,053,494 (Baskette et al.) in view of U.S. Patent No. 2,687,886 (Pitner).

Regarding independent claim 1, Figs. 1-8 of Baskette et al. show a paper registration apparatus including

a lower guide plate (26) supporting the sheet of paper (24) thereon and having a groove (near 22) formed at one side;

a side wall guide (58) vertically installed at the side of the groove (near 22) of the lower guide plate (26) parallel to a direction of a paper transfer route to perform a side registration of the sheet of paper;

a duplex transfer roller (22) installed perpendicular to the direction of the paper transfer route;

an idle roller (16) installed above the duplex transfer roller (22) at a predetermined inclination angle with respect to the duplex transfer roller (22) to move the sheet of paper towards the sidewall;

an idle roller rotation shaft holder (14) rotatably supporting both ends of a rotation shaft (18) of the idle roller (16);

a pressing unit (including 20) providing an elastic force to the idle roller (16) toward the duplex transfer roller (22); and

a pivot unit (including 34 and 80) that sets the inclination angle of the idle roller (16) within a predetermined range. However, the Baskette patent does not specifically disclose that the pivot unit sets the inclination angle according to a type of the paper, as claimed.

Regarding independent claim 8, Figs. 1-8 of Baskette et al. show a paper registration apparatus comprising:

an idle roller (16) installed above a transfer roller (22) at a predetermined inclination angle with respect to the transfer roller (22) to move a sheet of paper towards a sidewall (56) of the paper registration apparatus; and

a pivot unit (including 34 and 80) that sets the inclination angle of the idle roller (16) within a predetermined range. However, the Baskette patent does not specifically

disclose that the pivot unit sets the inclination angle according to a type of the paper, as claimed.

Regarding independent claim 15, Figs. 1-8 of Baskette show a paper registration apparatus, including

a lower guide plate (26) supporting the sheet of paper thereon and having a groove (30 or groove in 21) formed at one side;

a side wall guide (56) vertically installed at the side of the groove of the lower guide plate (26) parallel to a direction of a paper transfer route to perform a side registration of the sheet of paper;

a duplex transfer roller (22) installed perpendicular to the direction of the paper transfer route;

an idle roller (16) installed above the duplex transfer roller (22) at a predetermined inclination angle with respect to the duplex transfer roller (22) to move the sheet of paper towards the sidewall (56);

an idle roller rotation shaft holder (14) rotatably supporting both ends of a rotation shaft (18) of the idle roller (16);

a pressing unit (including 20) providing an elastic force to the idle roller (16) toward the duplex transfer roller (22); and

a pivot unit (including 34 and 80) that sets the inclination angle of the idle roller (16) within a predetermined range. However, the Baskette patent does not specifically disclose that the pivot unit sets the inclination angle according to a physical characteristic of the paper, as claimed.

With regard to claims 1, 8 and 15, the Pitner patent discloses that it is well known to provide a paper registration apparatus with a pivot unit (including 44 and 45) that sets an inclination angle of an idle roller (40) relative to a transfer roller (18) within a predetermined range according to a type (characteristic) of a paper in order to accurately register the paper. See, e.g., Fig. 3, column 4, lines 3-6 and column 1, lines 30-37. It would have been obvious to one of ordinary skill in the art at the time the invention was made to set the inclination angle of the idle roller of Baskette et al. according to the type of paper, in order to accurately register the paper, as taught by Pitner. Regarding the recitation "for a duplex printer which performs side registration of a sheet of paper before the sheet of paper is transferred toward a feed roller to print an image on a rear side of the sheet of paper after a front side of the sheet of paper is printed" in claims 1 and 15, this is a statement of intended use. Similarly, the recitation "for a printer which performs side registration of a sheet of paper" in claim 8 is a statement of intended use. As such, these recitations have not been given any patentable weight.

Regarding claims 2 and 9, Fig. 2 of Baskette et al. shows that an upper guide plate (12) having a groove (30 or groove in 21) formed at a position corresponding to

the groove (near 22) of the lower guide plate (26) is provided above the lower guide plate (26).

Regarding claims 3, 4, 10 and 11, Baskette et al. in view of Pitner discloses all of the limitations except for the ranges of the inclination angles. It would have been obvious to one having ordinary skill in the art at the time the invention was made to set the angles between 4 and 9 degrees or between 5 and 8 degrees, since it has been held that where the general conditions of a claim are disclosed in the prior art (e.g., setting the inclination angle according to the type of paper), discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233. One of ordinary skill in the art would have been motivated to set the inclination angle within the proper range to accurately register the paper, as shown in Pitner.

Regarding claim 16, the Pitner patent discloses that the pivot unit (including 44 and 45) sets an inclination angle of an idle roller relative to a transfer roller within a predetermined range according to a characteristic of a paper, but does not specifically mention weight. It would have been an obvious matter of design choice to adjust the inclination angle according to weight, since applicant has not disclosed that adjustment based on weight solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well adjusting the inclination angle based on any number of conveniently measured paper characteristics. One of ordinary skill in the art would have been motivated to adjust the inclination angle based on weight of the paper because weight is a paper characteristic that does not require alteration of the paper (e.g., cutting the paper or seasoning) or accurate measurement

of the paper (e.g., measuring the exact size of the paper), as taught by Pitner. See, e.g., column 1, lines 37-41.

5. Claims 5, 6, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baskette et al. in view of Pitner as applied to claims 1 and 9 above, and further in view of U.S. Patent No. U.S. Patent No. 3,915,449 (Johnson et al.). Baskette et al. in view of Pitner shows all of the limitations of claims 5, 6, 12 and 13, except for the elastic member of claims 5 and 12 and the slot of claims 6 and 13. Figs. 1-8 of Baskette et al. show a registration apparatus with a pivot unit having an idle roller rotation shaft (18) and an idle roller rotation shaft holder (14); an arm (including 34 and 90) extending horizontally from the idle roller rotation shaft holder (14) in a direction perpendicular to the idle roller rotation shaft (18); and a confining unit (including 96) confining a pivot range of the arm (including 34 and 90). Such confining unit (including 96) is a stopper, but Fig. 8 does not specifically show that the confining unit (including 96) has a slot as claimed.

Johnson et al., in Figs. 1-4 shows that it is well known to provide a registration apparatus with a pivoting unit (including 68) having an elastic member (68) that supports one side of an idle roller rotation shaft holder (including 58) via an arm portion (64). This elastic member can move the axis (60) of an idle roller (62) to a position that is perpendicular with a guide wall (38). See column 4, lines 28-30. Fig. 3 of Johnson et al. also shows that it is well known to provide a registration apparatus with a confining unit (including 67) having a slot (i.e., slot through 86 and into 67) that confines a horizontal space in which an arm (including 64 and 66) is inserted and

pivots. Such slot guides the movement of the arm (including 64 and 66). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the apparatus of Baskette et al. and Pitner with an elastic member that can move the axis of the idle roller (16) of Baskette et al. perpendicular to the guide wall (56) of Baskette et al., because this provides a user with an accurate initial reference point from which they can set the inclination angle of the idle roller, as shown in Fig. 3 of Johnson et al. Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a slot in the confining unit (including 96) of Baskette et al. to guide the movement of the arm of Baskette et al., as taught by Johnson et al.

6. Claims 10-11, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 2,687,886 (Pitner) as applied to claim 8 above. Pitner discloses all of the limitations of claims 10-11, except for the ranges of the inclination angles. It would have been obvious to one having ordinary skill in the art at the time the invention was made to set the angles between 4 and 9 degrees or between 5 and 8 degrees, since it has been held that where the general conditions of a claim are disclosed in the prior art (e.g., setting the inclination angle according to the type of paper), discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233. One of ordinary skill in the art would have been motivated to set the inclination angle within the proper range to accurately register the paper, as shown in Pitner.

7. Claims 1, 3-4, 7 and 14-16, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 2,687,886 (Pitner) in view of U.S. Patent No. 3,947,022 (Kockler).

Regarding independent claim 1, Figs. 3-4 of Pitner show a paper registration apparatus for a printer including

a lower guide plate (17) supporting the sheet of paper thereon and having a groove (near 22) formed at one side;

a side wall guide (16) vertically installed at the side of the groove (near 22) of the lower guide plate (17) parallel to a direction of a paper transfer route to perform a side registration of the sheet of paper;

a duplex transfer roller (18) installed perpendicular to the direction of the paper transfer route;

an idle roller (40) installed above the duplex transfer roller (18) at a predetermined inclination angle with respect to the duplex transfer roller (18) to move the sheet of paper towards the sidewall (16);

an idle roller rotation shaft holder (including 37) rotatably supporting both ends of a rotation shaft (41) of the idle roller (40);

a pivot unit (including 44 and 45) that sets the inclination angle of the idle roller (40) within a predetermined range according to a type of the paper (see, e.g., column 4, lines 4-8); and

a pressing unit (including 30) providing a force to the idle roller (40) toward the duplex transfer roller (18). However, the Pitner patent does not specifically show that the pressing unit (including 30) provides an elastic force to the idle roller (40), as claimed.

Regarding independent claim 15, Figs. 3-4 of Pitner show a paper registration apparatus for a printer including

a lower guide plate (17) supporting the sheet of paper thereon and having a groove (near 22) formed at one side;

a side wall guide (16) vertically installed at the side of the groove (near 22) of the lower guide plate (17) parallel to a direction of a paper transfer route to perform a side registration of the sheet of paper;

a duplex transfer roller (18) installed perpendicular to the direction of the paper transfer route;

an idle roller (40) installed above the duplex transfer roller (18) at a predetermined inclination angle with respect to the duplex transfer roller (18) to move the sheet of paper towards the sidewall (16);

an idle roller rotation shaft holder (including 37) rotatably supporting both ends of a rotation shaft (41) of the idle roller (40);

a pivot unit (including 44 and 45) that sets the inclination angle of the idle roller (40) within a predetermined range according to a physical characteristic of the paper (see, e.g., column 4, lines 4-8); and

a pressing unit (including 30) providing a force to the idle roller (40) toward the duplex transfer roller (18). However, the Pitner patent does not specifically show that the pressing unit (including 30) provides an elastic force to the idle roller (40), as claimed.

With regard to claims 1 and 15, Fig. 5 of the Kockler patent shows that it is well known to provide a sheet handling device with a pressing unit (including 104 and 126) that provides an elastic force to an idle roller (114) toward a duplex transfer roller. Column 5, lines 22-40 explain that the elastic element 126 controls the pressure at which a sheet is pressed towards the duplex transfer roller in order to maintain sufficient friction between the sheet and the duplex transfer roller. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the pressing unit of the Pitner patent with an elastic element so that the pressing unit provides an elastic force to the idle roller toward a duplex transfer roller, in order to maintain sufficient friction between a conveyed sheet and the duplex transfer roller, as taught by Kockler.

Regarding claims 3 and 4, Pitner in view of Kockler discloses all of the limitations except for the ranges of the inclination angles. It would have been obvious to one having ordinary skill in the art at the time the invention was made to set the angles

between 4 and 9 degrees or between 5 and 8 degrees, since it has been held that where the general conditions of a claim are disclosed in the prior art (e.g., setting the inclination angle according to the type (characteristic) of a paper), discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233. One of ordinary skill in the art would have been motivated to set the inclination angle within the proper range to accurately register the paper, based on the type of paper, as taught by Pitner.

Regarding claims 7 and 14, the pressing unit of the Pitner patent has a circular column member (36) extending upward from an upper center portion of the idle roller rotation shaft (41) to be rotatably supported in a printer body (see column 1, line 2 of Pitner), wherein the circular column member (36) is a center shaft of the rotation of the idle roller (40). Providing an elastic member (i.e., spring 126 in Fig. 5 of Kockler) to the pressing unit of Pitner, in a manner as taught by Kockler, will result in the spring being installed around an outer circumference of the circular column member of Pitner to press the idle roller rotation shaft holder (including 37) of Pitner and the idle roller (40) of Pitner toward the transfer roller (18) of Pitner. Thus, the combination of Pitner and Kockler meets all of the limitations of claims 7 and 14.

Regarding claim 16, the Pitner patent discloses that the pivot unit (including 44 and 45) sets an inclination angle of an idle roller (40) relative to a transfer roller (18) within a predetermined range according to a characteristic of a paper, but does not specifically mention weight. It would have been an obvious matter of design choice to adjust the inclination angle according to weight, since applicant has not disclosed that

adjustment based on weight solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well adjusting the inclination angle based on any number of conveniently measured paper characteristics. One of ordinary skill in the art would have been motivated to adjust the inclination angle based on weight of the paper because weight is a paper characteristic that does not require alteration of the paper (e.g., cutting the paper or seasoning) or accurate measurement of the paper (e.g., measuring the exact size of the paper), as taught by Pitner. See, e.g., column 1, lines 37-41.

Response to Arguments

8. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Morrison whose telephone number is (571) 272-7221. The examiner can normally be reached on M-F, 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Crawford can be reached on (571) 272-6911. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

06/09/2006

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SUPERVISORY PATENT EXAMINER